

### REMARKS

Applicants thank the Examiner for rejoining claims 7-8, 10-12, 15-23, 25-28, 31 and 56-57. (Applicants note, however, that the specification does indicate most of the information the Examiner includes at pages 2-7 of the Office Action). Claims 1, 26, 27, 28, 31, 33, 34, 38, 39, 42, 43, 46, 47, 48, 49, 52, 53, 55 and 56 have been amended to more clearly describe Applicants' invention.. Support for the amendments can be found throughout the specification, for example, at pages 16-21. Claims 22 and 25 has been cancelled without prejudice. New claims 68-83 have been added. No new matter has been added. The new claims read on the elected species. Claims 1-21, 23-24 and 26-83 are pending. Claims 9, 13, 14, 24, 29, and 32-55 have been withdrawn from consideration by the Examiner. Claims 1-8, 10-12, 15-23, 25-28, 30-31 and 56-57 have been rejected.

#### **Objections to the specification**

The specification has been amended to address the informalities noted by the Examiner at page 8 of the Office Action. Support from the amendments can be found throughout the specification. No new matter has been added.

#### **Rejections under 35 U.S.C. § 112, second paragraph**

Claims 1-8, 10-12, 15-23, 25-28 and 30-31 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. While Applicants continue to believe it is acceptable to use a trademark or tradename to identify a product (as supported by the fact that these products have their own MSDS sheets, previously submitted, the claims have been amended to remove trademarks and tradenames as suggested by the Examiner at pages 9-10 of the Office Action. Applicants respectfully request reconsideration and withdrawal of this rejection.

#### **Rejections under 35 U.S.C. § 112, first paragraph**

Claims 11-12 and 15-17 have been rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The Examiner contended that "Applicants limited claim 1 [sic] a first urethane acrylate oligomer limited to CN964, CN963,

CN990 or CN973. They submitted no evidence that the urethane acrylate oligomer of claims 11-12 and 15-17 describes any of these trade name materials.” As amended, claim 1 recites “the first urethane acrylate oligomer is an aliphatic polyester based urethane diacrylate oligomer, a hard aliphatic urethane acrylate oligomer, an aliphatic urethane containing bound silicone, or an aromatic urethane acrylate oligomer.” The subject matter of claims 11-12 and 15-17 fall within these classes of compounds. Moreover, the specification describes these formulae. See, for example, pages 10-11 of the specification. Applicants respectfully request reconsideration and withdrawal of this rejection.

### **Rejections under 35 U.S.C. §§ 102 and 103**

Claims 1-2, 4-6, and 18-19 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Clabburn et al (WO 02/39183 A1). Claims 1-2, 4-8, 10, and 18-19 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Ojeda et al (6,326,072). Claims 1-2, 4-8, 10, 18-21 and 23 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Lim et al (5,880,171). Claims 1-2, 4-6, 10, 18-21, and 23 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Johnson et al (6,120,946) in view of Sartomer Application Bulletin: SN-980 Aliphatic High Speed Urethane Acrylate and RN 189146-15-4 and RN 41484-35-9. Claims 1-2, 4, 6-8, 10, 18-21, 23 and 25 rejected under 35 U.S.C. § 102(b) as being anticipated by Chawla et al (WO 00/20517). Claims 1-2, 4, 6-8, 10-12, 15-17, 21, 23 and 56 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Lee et al (US 2002/0086914 A1). Claim 57 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Lee et al (US2002/00869 14 A1). Claims 1, 7-8, 10-12, 15-21, 23 and 56 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Wright (5,891,530). Claims 1-2, 4-8, 11-12, 15-21, 23, and 56 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Downs et al (5,919,834). Claims 1, 10, 18-21, and 23 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Parakka et al (Polymeric Materials Science and Engineering). Claims 1, 7-8, 10-12, 15-16, 17-21 and 56 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Xu et al (WO 97/23524). Claims 2, 4-6, 25 and 57 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Xu et al. Claims 1-2, 4, 6-8, 10-12, 15-21, 23 and 56 have been rejected under 35 U.S.C. § 102(b) as

being anticipated by Schroeder et al (WO 97/42529 A1) further evidenced by Ciba, Photoinitiators for UV Curing, Key Products Selection Guide 2003, i.e. Ciba. Claims 1-2, 6-8, 10-12, 15-21, 23, 25-26 and 56-57 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Glotfelter (Adhesives Age (text, text+image, PDF)). Claims 1, 10, 18-21, and 23 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Takayama et al (EP 0 877 389 A1) as evidenced by Lutz (5,968,605). Claims 1-2, 4-8, 10-12, 15-21, 23 and 56 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Ceska et al as evidenced by Lutz et al and 2004 Product Bulletin: URETHANE ACRYLATE OLIGOMERS and RN 149260-52-6. Claims 1-2, and 4-6 rejected under 35 U.S.C. § 102(b) as being anticipated by Krongauz et al. (WO 98/45344) as evidenced by Ciba Specialty Chemical. Claims 1-2, 4-8, 10, 17-23 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Aloisio et al (EP 1 065 181 A2) as evidenced by RN 174285-64-4 and 2004 Product Bulletin. Claims 1-2, 4-8, 10, 18-22, and 56-57 rejected under 35 U.S.C. § 102(b) as being anticipated by Khudyakov et al (EP 1 178 064 A1). Claims 1-8, 10, and 18-21 have been rejected under 35 U.S.C. § 102(e) as being anticipated by Conroy et al (2004/0121268) as supported by Provisional application 60/489945 filed July 22, 2003 and evidenced by SARTOMER Product Bulletin: SR-368D. Claims 56-57 have been rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Mirle et al (5,418,112). Claims 56-57 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Mirle et al (5,418,112). Claims 1-2, 4, 6-8, 10-12, 15-23 and 56 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Lin et al (6,420,451) as evidenced by Sartomer Application Bulletin and Sartomer (Low Toxicity...). Claims 1-2, 4, 6-8, 10-12, 15-21, 23 and 56 have been rejected under 35 U.S.C. § 102(a or e) as being anticipated by Ylitalo et al (US 2003/0021962 A1). Claims 56-57 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Hagiwara et al (EP 0 715 212 A1). Claims 56-57 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Wolf et al (5,470,689). See the Office Action at pages 11-34. Collectively, the references recited above will be referred to as "the Cited References." Claims 1 and 56 are independent.

Applicants have discovered a liquid stereolithography resin including a first urethane acrylate oligomer, a first acrylate monomer, a polymerization modifier, a second urethane

acrylate oligomer, and a stabilizer, in which the first urethane acrylate oligomer is an aliphatic polyester based urethane diacrylate oligomer, a hard aliphatic urethane acrylate oligomer, an aliphatic urethane containing bound silicone, or an aromatic urethane acrylate oligomer. See independent claim 1.

Applicants have also discovered a liquid stereolithography resin including a liquid stereolithography resin including a first urethane acrylate, a first acrylate monomer, a second urethane acrylate oligomer, and a stabilizer. See independent claim 56.

None of the Cited References describe a composition including a first urethane acrylate oligomer, a first acrylate monomer, a polymerization modifier, a second urethane acrylate oligomer, and a stabilizer. In addition, none of the Cited References, alone or in combination, teach or suggest a composition including a first urethane acrylate oligomer, a first acrylate monomer, a polymerization modifier, a second urethane acrylate oligomer, and a stabilizer. For at least this reason, independent claims 1 and 56 and the claims that depend from it are patentable over each of the cited references.

Applicants respectfully request that the rejections under 35 U.S.C. §§ 102 and 103 be reconsidered and withdrawn.

### **New Claims**

Applicants have also discovered a liquid stereolithography resin including an aliphatic polyester based urethane diacrylate oligomer, an ethoxylated (3) trimethylolpropane acrylate, and a polymerization modifier selected from the group consisting of isobornyl acrylate, ethoxylated (5) pentaerythritol tetraacrylate, an aliphatic urethane acrylate, tris-(2-hydroxyethyl)isocyanurate triacrylate, and mixtures thereof. See new independent claim 68. New claims 69-82 depend from claim 68. None of the Cited References describe or suggest a liquid stereolithography resin including an aliphatic polyester based urethane diacrylate oligomer, an ethoxylated (3) trimethylolpropane acrylate, and a polymerization modifier selected from the group consisting of isobornyl acrylate, ethoxylated (5) pentaerythritol tetraacrylate, an aliphatic urethane acrylate, tris-(2-hydroxyethyl)isocyanurate triacrylate, and mixtures thereof. Accordingly, claims 68-82 are patentable.

Applicant: Alma L. Coats et al.  
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CONCLUSION

Applicants ask that all claims be allowed. Please apply any deposits or credits to Deposit Account No. 19-4293.

Respectfully submitted,

7-705  
Date

  
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